REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 18-28 are currently pending in this application, Claims 18, 25, and 26 having been amended. The changes and additions to the claims do not add new matter and are supported by the originally filed specification, for example, on page 15, line 19, page 17, line 24, and page 20, line 23.

In the outstanding Office Action, Claims 18-28 were rejected under 35 U.S.C. §102(a) as being anticipated by Keller at al. (Vehicular Technology, IEEE Transactions on, Vol. 49, Issue 5, September 2000, pages 1893-1906, hereafter "Keller").

With respect to the rejection of Claim 18 under 35 U.S.C. §102(a), Applicants respectfully submit that the amendment to Claim 18 overcomes this ground of rejection. Amended Claim 18 recites, *inter alia*,

> precalculating a plurality of adaptive loading tables, each loading table containing x subcarriers for modulation with a lower modulation scheme, y subcarriers for modulation with a standard modulation scheme, and z subcarriers for modulation with a higher modulation scheme (x, y, and z are integer numbers); wherein the sum of x, y, and z is n and a resulting number of coded bits of a multicarrier symbol is constant;
>
> selecting one of the adaptive loading tables for said multicarrier transmission in order to fix the integer numbers x, y, and z.

Applicants respectfully submit that Keller fails to disclose or suggest at least these features of Claim 18.

Keller is directed to an adaptive modulation method for duplex OFDM transmission. Keller teaches using N subcarriers and evaluating a channel transfer function for each subcarrier, and choosing a modulation scheme according to the resulting signal-to-noise ratio

(SNR) for multicarrier transmission (see Section II.A and Section II.D). Each subcarrier is modulated with the corresponding stored modulation scheme.

However, <u>Keller</u> describes that "the modulation scheme M_n is selected if the instantaneous channel SNR exceeds the switching level l_n." (See Section II.D (1)). Thus, in <u>Keller</u> the system performs a new modulation adaptation where, depending on the SNR values, the number of subcarriers that should be modulated with a low, a standard, or a high modulation scheme *will vary*.

On the contrary, Claim 18 recites "precalculating a plurality of adaptive loading tables, each loading table containing x subcarriers for modulation with a lower modulation scheme, y subcarriers for modulation with a standard modulation scheme, and z subcarriers for modulation with a higher modulation scheme (x, y, and z are integer numbers); wherein the sum of x, y, and z is n and a resulting number of coded bits of a multicarrier symbol is constant," and "selecting one of the adaptive loading tables for said multicarrier transmission *in order to fix the integer numbers x, y, and z.*"

In other words, there is a pre-calculation of numbers x, y, and z, which means that during the whole communication, the same number of x, y, and z subcarriers that will have to be modulated with a chosen low, standard, or high modulation scheme *will not vary*. This is different from <u>Keller</u> because no switching level has to be computed to determine a modulation scheme that should be selected for a given subcarrier. Therefore, the invention of Claim 18 is simplified over <u>Keller</u> because it becomes fixed that the x subcarriers with the worst channel transmission profiles are modulated with a low modulation scheme and the z subcarriers with the best channel transmission profiles are modulated with a high modulation scheme.

Therefore, Applicants respectfully submit that <u>Keller</u> fails to disclose or suggest "precalculating a plurality of adaptive loading tables, each loading table containing x subcarriers for modulation with a lower modulation scheme, y subcarriers for modulation with a standard modulation scheme, and z subcarriers for modulation with a higher modulation scheme (x, y, and z are integer numbers); wherein the sum of x, y, and z is n and a resulting number of coded bits of a multicarrier symbol is constant," and "selecting one of the adaptive loading tables for said multicarrier transmission in order to fix the integer numbers x, y, and z," as defined by Claim 18.
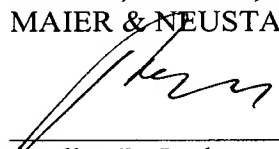
Therefore, Applicants respectfully submit that Claim 18 (and all associated dependent claims) patentably distinguishes over <u>Keller</u>.

Amended independent Claims 25 and 26 recite features similar to those of <u>Keller</u> discussed above. Therefore, Applicants respectfully submit that Claims 25 and 26 (and all associated dependent claims) patentably distinguish over <u>Keller</u>.

Consequently, in light of the above discussion and in view of the present amendment, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

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